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COMMERCIAL VITALITY IN THE CODMAN SQUARE AREA OF DORCHESTER

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I

Introduction

The vitality of small retail centers, when faced with a surrounding neighborhood whose population seems to be in transition, may often be threatened with rapid business failure, high storefront vacancy rates and a marked tendency for local businessmen to close their stores in anticipation of these problems. Although some business will be lost as one population moves out of the area, the buying power of the incoming population may in fact be more than adequate to sustain the local retail area. The question of whether sufficient buying power exists to sustain the shopping center can be answered by a simple supply and demand analysis of the goods that the shopping center supplies and the buying power, or demand, of the area's population. Using supply and demand analysis, this paper examines the vitality of the Codman Square area of Dorchester.

Since small neighborhood retail centers provide mostly convenience goods and clothing, our analysis will concentrate on only these types of goods. By convenience goods we mean those items that shoppers buy in nearby neighborhood shopping centers. Examples of these types of stores include grocery stores, barber shops, cleansers, and hardware stores, etc. Shoppers are generally

unwilling to spend a great deal of time in search and travel to buy these goods and prefer them to be located at a convenient distance from their homes. The analysis then will concentrate on four types of convenience goods and clothing.

The Codman Square area of Dorchester is immediately surrounded by Census tracts 922 and 1005 to the west and tract 923 to the east. An inspection of the two west tracts and the east tract yielded quite disparate socioeconomic characteristics of the populations in the tracts. The housing in the two west tracts is mostly single and two-family homes in fairly good physical condition. Housing in the east tract is composed of two and three-story structures in much worse physical condition. The population in the two west tracts is predominantly white with 4.5% and 8.4% of the families below the poverty level. Tract 923, however, has a black population of 54.8% with 21.2% of the families below the poverty level. These tract characteristics and a visual inspection of the area seemed to indicate that Washington Street, which runs through the middle of Codman Square, marked the line of delineation between the two disparate populations.

For the purposes of our analysis, we have aggregated convenience goods into four category types. The four categories of convenience goods and the clothing category include the following types of stores:

1. Service:
   - Barber Shops
   - Beauty Shops
   - Cleansers
   - Laundromats
   - Shoe Repair Shops
2. Variety:
   - Drug Stores
   - Discount Stores
   - Tobacco and Magazine Shops
   - Hardware Stores
   - Toy Stores

3.	Alcohol:	Taverns and Bars Package Stores
4.	Clothing:	Mens' and Womens' Clothing Stores Wig Shops
5.	Food:	Supermarkets Superettes Grocery Stores

A preliminary walking survey of the area yielded a total of 20 Service establishments, 15 Variety stores, 13 Food stores, 21 Alcohol establishments and 14 Clothing stores. Closed and boarded-up establishments were also counted and a vacancy rate of 18% was observed.

Since other shopping centers that surround the Codman Square area may include only some of those goods found in Codman Square and will compete for shoppers in the areas between Codman Square and other retail centers, we have established different "market areas" defined in terms of the pull of surrounding retail centers for the different categories of goods. A survey of these centers revealed that the competitive pull for shoppers in the area was approximately the same for the three goods categories of Services, Variety and Alcohol. Rules of thumb were used in delineating the market boundaries by assessing the relative pull of these retail centers based on the number and variety of establishments in these categories. In most cases the boundary was delineated approximately halfway between Codman Square and the surrounding competitive retail centers (Dorchester Avenue, Mattapan Square, north and south Washington Street, Norfolk Street and Blue Hill Avenue). Clothing and Food category market areas were somewhat larger since the competitive pull of the surrounding retail centers was comparatively weaker in these categories. Figure 1 presents a map of the tracts surrounding the Codman Square area and the market areas defined for the five classes of goods being analyzed.

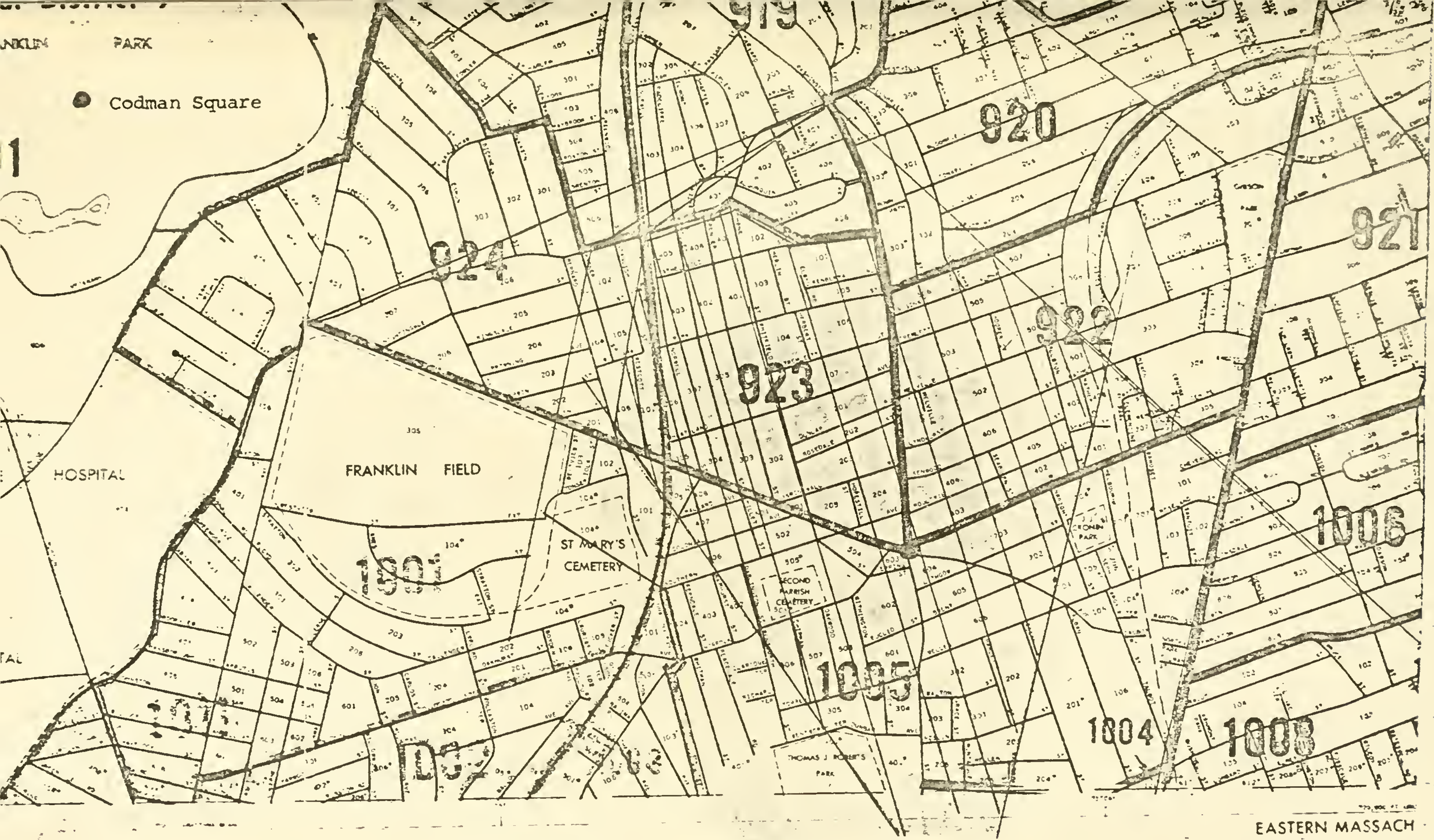
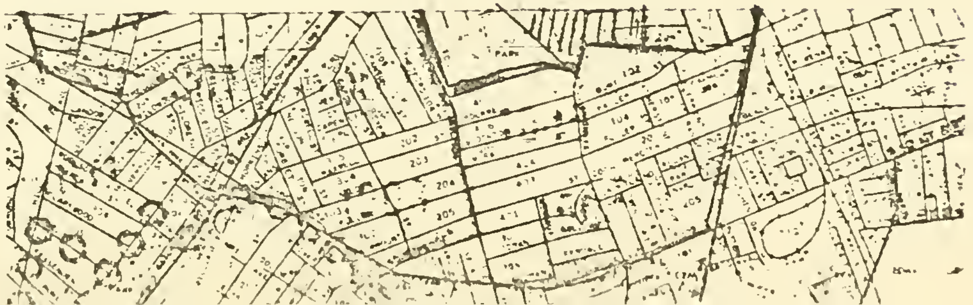


FIGURE 1.

. . . . . . Map below of different scale . . . .



Key to Market Areas

- ▨ Market Area for Variety, Services and Alcohol
- ▨ Market Area for Food (includes Area 1)
- ▨ Market Area for Clothing (includes Areas

In assessing the demand and supply of the five classes of goods in the Codman Square commercial area and its potential vitality, we hope to make some policy recommendations for public or private investment in the area. Section II of this paper presents in brief the methodology used. Section III contains a detailed description of the steps in the analysis and the presentation of the data. Section IV presents conclusions and policy recommendations.

II

Methodology

Several steps are required in the assessment of the demand for the five classes of goods. Potential demand for goods can be determined through knowledge of the buying power and shopping behavior of neighborhood residents. If total income of all residents can be determined and consumption behavior by income class in this geographic area can be determined, then total consumption for each class of goods can be calculated. Whether or not 100% of the residents' consumption takes place in the Codman Square area must be determined by an analysis of the goods and services that are available in the area. Since sales data on each establishment in the area is unavailable, our analysis of supply must be done on a square footage basis. This entails translating consumption dollars on the demand side into square footage terms and will be accomplished by using regional median ratios of sales per square foot.

Once both the supply and demand for each class of goods is assessed in terms of square footage, the difference between the two will indicate whether there is an excess demand or an excess supply situation for any class of goods. Policy recommendations cannot be made for square footage investment however, since in an excess demand situation, the absolute difference of demand over supply cannot be assumed to be potential demand for the Codman Square area alone. Even if the goods were provided in the area, shoppers may still buy these goods outside the area (i.e., another outside shopping trip or because a wider choice of selection is available elsewhere).

The purchase of clothing is a good example of this problem. Even if a large clothing store were located in the area, shoppers might still buy clothing in the downtown shopping area, simply because of the larger variety of stores offering clothing there. It may also be that in a commercial area with high vacancy rates, the cost of consumer information is extremely high. "If certain types of stores are not available, then no neighborhood shopping satisfaction can be achieved; similarly, the implications of shopping efficiency of a very limited number of alternatives or of unusual birth or death rates for particular types of stores are substantial. A highly dynamic commercial structure imposes a greater cost on the consumer in terms of information collection and evaluation".[2] For these reasons, if our conclusions show some excess demand for a class of goods, then only some percentage of that excess will be considered as potential demand for the Codman Square area.

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[2] Alexis, Haines, and Simon, "The Dynamics of Commercial Structure in Central City Areas", *Journal of Marketing*, April, 1971, p.10.

III

Data Analysis

The Demand Side

Shopping characteristics in the form of percent of income spent on particular items by income class were available from Consumer Expenditures and Income for Boston, Mass., 1960-61. The distribution of families broken down by income class for each tract in the different market areas was available from the Census of Population for the Boston Standard Metropolitan Statistical Area. This distribution, however, reflected the number of families in a given 'gross' income category. To obtain a distribution by income 'after' taxes, an adjustment had to be made. The distribution of families by an income-after-taxes breakdown was available for the city of Boston and the tract family distributions were adjusted to reflect these figures. The number of families in each income category in each tract were then multiplied by the mean income of that income category to obtain total money-after-taxes income for the tracts in each income category. The income figures then required adjustment to obtain total consumption. Again, Boston figures were available on the average propensity to consume for each income category and were applied to the total money-after-taxes income for each tract and income category to yield total consumption by tract and by income category.

Once total consumption was established in each tract, the shopping behavior characteristics of different income categories could be applied to furnish potential demand figures for each type of good.

Percentages, for Boston, spent on each class of goods for each income level were multiplied by the income breakdowns of total consumption.

It should be noted that whenever the market boundary for a particular class of goods included only some percentage of a tract, that percentage was applied to the spending of families in all income classes. The assumption was made that the distribution of families by income class was distributed evenly throughout the tract.

One more adjustment was necessary on the measured potential demand figures. As mentioned in the methodology, not all potential demand can be considered as potential demand for the Codman Square area alone. Clothing particularly falls into the category of limited neighborhood demand; we have, therefore, estimated that only 50% of the potential clothing demand in the area is relative to Codman Square stores. The four other categories were assessed at 90%. Tables 1 through 5 present for the five categories of goods, the distribution of families by income class for the tracts in each market area, as well as income, total consumption, potential measured demand and potential adjusted demand. Table 6 presents a summary of Tables 1 through 5 with each class of goods' potential demand in both dollar and square footage terms. Regional median ratios of sales per square foot for each class of goods[3] were used to adjust the dollar figures into square footage terms.

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[3] Available from Dollars and Cents of Shopping Centers, 1971, Urban Land Institute.

[illegible]	1·023	
[illegible]	1·027	[illegible]
	1·033	[illegible]

Table 1

DEMAND FOR ALCOHOLIC BEVERAGES

	Adjusted # of Families Tracts 922	923	920	1005	Total Families	Mean Income $$$	APC	% of Total Consumption spent on class of goods	Potential Demand Measured $$$	Adjusted $$$
0-1000	10	17	5	34	66	500	2.114	1.2%	837	763
00 - 2000	29	58	15	117	219	1500	1.202	.6%	2369	2132
00 - 3000	25	45	13	91	174	2500	1.033	1.4%	6291	5661
00 - 4000	53	94	24	190	361	3500	1.053	.9%	11974	10776
00 - 5000	50	88	22	178	338	4500	1.052	3.4%	54403	48962
00 - 6000	65	114	29	230	438	5500	.963	1.1%	25519	22967
00 - 10000	181	319	83	647	1230	8000	.924	2.3%	205017	184515
000 - 15000	43	74	20	150	287	12500	.902	1.8%	58247	52419
15000+	33	58	15	118	224	32500	.651	1.7%	80568	72511
									445224	400702

Table 2

DEMAND FOR [illegible] SERVICES

	Adjusted # of Families Tracts				Total Families	Mean Income	APC	% of Total Consumption spent on class of goods	Potential Measured $$$	Demand Adjusted $$$
	922	923	920	1005						
0-1000								1.34%	935	842
1000 - 2000								1.54%	6081	5473
2000 - 3000								1.42%	6281	5743
3000 - 4000	These columns are same as those in Table 1							1.74%	23150	20835
4000 - 5000								1.67	26722	24050
5000 - 6000								1.79	41526	37373
6000 - 10000								1.70	154567	139110
10000 - 15000								1.91	61806	55625
15000+								1.70	80568	72511
									401735	361517

Table 3

DEMAND FOR VARIETY GOODS

	Adjusted # of Families				Total	Mean	APC	% of Total Consumption spent on class of goods	Potential	Demand
	Tracts									
	922	923	920	1005	Families	Income			Measured	Adjusted
0-1000								4.46%	3111	2799
1000 - 2000								4.88%	19269	17342
2000 - 3000								4.52%	20311	18282
	These columns are the same as those in Tables 1 & 2									
3000 - 4000								4.64%	61734	55561
4000 - 5000								4.71%	75364	67828
5000 - 6000								4.98	115529	103976
6000 - 10000								4.37	397328	357595
10000 - 15000								3.62%	117140	105426
15000+								3.84%	181988	164789
									991773	892595

Table 4

DEMAND FOR FOODS AT HOME

	Adjusted # of Families					Total	Mean	APC	% of Total Consumption spent on class of goods	Potential Demand	
	Tracts										
	923	920	922	924	1005	Families	Income $$$			Measured $$$	Adjusted $$$
0-1000	17	5.1	9.5	3.2	20.4	55.2	500	2.114	18.45%	10765	9689
-1999	58	15	28.5	11.5	70.2	183.2	1500	1.202	29.25%	96614	86953
-2999	45	12.6	25	8.9	54.8	146.3	2500	1.033	21.10%	79719	71747
-3999	94	24.3	53	18.5	114	303.8	3500	1.053	24.05%	260270	242343
-4999	88	22.8	49.5	17.3	106.8	284.4	4500	1.052	22.30%	300228	270205
-5999	114	29.6	65	22.5	138	369.1	5500	.963	22.25%	434958	391462
-9999	319	83.3	180.5	63.5	388.2	1034.5	8000	.924	21.53%	1641014	1481412
0-14999	74	19.5	42.5	14.7	90	240.7	12500	.902	15.70%	426069	383462
0+	58	15	32.5	11.4	71	187.7	32500	.651	13.55%	538103	484293
										3801740	3421566

Table 5

DEMAND FOR CLOTHING GOODS

	Adjusted # of Families Tracts									Total Families	Mean Income	APC	% of Total Consumption spent on class of goods	Potential Demand	
	920	922	923	924	1001	1002	1003	1004	1005					Measured	Adjusted
0-1000	17	5.1	9.5	12.8	32	20	24	27	34	181.4	500	2.114	8.78%	16835	8418
0 - 2000	58	15	28.5	46	110	73	80	93	117	620.5	1500	1.202	6.98%	78090	39045
0 - 3000	45	12.6	25	35.6	86	57	63	71	91	486.2	2500	1.033	7.25%	91032	45516
0 - 4000	94	24.3	53	74	178	117	130	149	190	1009.3	3500	1.053	8.51%	316867	158434
0 - 5000	88	22.8	49.5	69.2	167	109	120	139	178	942.5	4500	1.052	8.33%	371534	185767
0 - 6000	114	29.6	65	90	215	142	156	181	230	1222.6	5500	.963	8.86%	573582	286791
0 - 10000	319	83.3	180.5	254	607	398	440	509	647	3437.8	8000	.924	9.18	2332203	1166102
00 - 15000	74	19.5	42.5	58.8	141	94	104	118	150	801.8	12500	.902	11.46%	1035324	517662
15000+	58	15	32.5	45.6	110	73	80	93	118	625.1	32500	.651	9.22%	1218945	609473

Totals 3034412 3017207

TABLE 6

(Summary of Tables 1 through 5)

DEMAND FOR THE FIVE CLASSES OF GOODS

Class of Goods	Adjusted Demand	Weighted* Average of Sales Per Square Foot	Demand Measured in Total Square Feet
1. Alcoholic Beverages	$ 400,702	$ 85.01	4717
2. Services	$ 361,517	$ 30.01	12,046
3. Variety Goods	$ 892,595	$ 38.17	23,383
4. Foods at Home	$ 3,421,566	$ 101.56	33,690
5. Clothing Goods	$ 3,017,207	$ 44.48	67,833

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[*] Sales per square feet was not available for such general classes of goods as Services or Variety Goods,etc., but rather in the form of sales per square feet of barber shops or sales per square of toy stores. A weighted average of sales per square feet was therefore calculated for each category above, using figures for all types of stores in each category.

The demand for Alcoholic Beverages was lowest at 4714 square feet, followed by Services at 12,046 square feet, Variety Goods at 23,383 square feet, Foods at Home at 33,690 square feet and Clothing Goods - the largest category - at 67,833 square feet. Whether this demand is being met by the existing stores in the area can be answered by an analysis of the available supply.

The Supply Side

Supply figures were calculated based on the square footage of gross leasable area*. Area estimates for each category of goods were derived from merchant interviews, on-site measurements and the City of Boston Topographic and Planimetric Survey Maps. These figures were then compared with range estimates for appropriate establishments from the Dollars and Cents of Shopping Centers cited above to insure the reasonableness of the estimates. Table 7 presents the calculated supply of square feet for each category of goods.

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*Total floor area designed for tenant occupancy and exclusive use, including basements, mezzanines and upper floors.

TABLE 7

SUPPLY FOR THE FIVE CLASSES OF GOODS

Class of Goods	Number of Stores	Square Feet per Store	Supply Measured in Total Square Feet
1. Alcoholic Beverages	21	1680	39,060
2. Services	20	1034	20,690
3. Variety Goods	15	2346	35,185
4 Foods at Home	13	3066	39,860
5. Clothing Goods	14	2777	38,900

Conclusions and Recommendations

In order to assess the vitality of the Codman Square area, conditions of excess supply, suggesting no further investment, or excess demand, which may or may not indicate the feasibility of additional investment, must be determined for each category of goods. Table 8 presents the results obtained when square feet by goods category for both supply and demand were analyzed.

TABLE 8

Class of Goods	Square Feet Excess Demand	Square Feet Excess Supply
1. Alcoholic Beverages		34,346
2. Services		8,644
3. Variety Goods		11,802
4. Foods at Home		6,557
5. Clothing Goods	28,933	

The only excess demand indicated is in the category of Clothing Goods. Further investment in this area, however, is not necessarily suggested since the population's excess demand may be met by other market areas. Because none of the clothing stores in the area are large department clothing chains which offer a wider range of choice to the consumer, but are smaller and more specialty-oriented, further investment in this type of clothing store may not prove viable.

The other four categories of goods indicate excess supply situations. The excess in Services, however, may be overestimated. Supply figures for the analysis were based on 1973 observations, while the demand estimates were obtained from 1960 figures. Since the national economy has shifted considerably over the period 1960 to 1970 from a manufacturing to service-oriented economy, increased demand in this category may have been substantial enough to lower our excess supply figure considerably. Implications for further investment in this category therefore should be based on an analysis of trends over time rather than on stochastic point-in-time estimates provided in this analysis.

The excess supply indicated in the remaining three categories - Alcoholic Beverages, Variety Goods, and Foods at Home - may indicate two possible conditions:

1. the Codman Square area is supply-saturated in these categories and no further investment is indicated

or

2. shoppers from outside the Codman Square area are crossing market boundaries to purchase these types of goods.

The former is probably the case in the category of Foods at Home. This category seems to be supply-saturated and no further investment in food stores is indicated. The latter situation, however, may exist in the Alcoholic Beverages category. Since most of the establishments in this category are liquor stores rather than taverns, it seems likely that shoppers passing through the area may be picking up the excess supply in this category.

The excess supply situation in the final category of Variety Goods, even though fairly small, is more difficult to analyze. Items in this category of goods are extremely varied and range from income-elastic goods such as toys to income-inelastic goods such as drugs. Here again, a more dynamic appraisal of the trends over time of area population incomes would provide a more appropriate indicator of the feasibility of further investment in this category.

In general, the outlook for increased investment in the area seems less than optimistic. Present levels of demand, however, may be substantial enough to sustain existing stores in the area. The stochastic nature of this analysis can only provide weak support to this last conclusion and suggests, therefore, a more detailed and dynamic analysis of the trends in area incomes over time.

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